Atypical Situations

Atypical Situations

Areas in which indicators of one or more wetland parameters have been obscured by some recent change or disturbance

Examples of Disturbances

- **Human Activities**
  - Removal of vegetation
  - Removal of soil
  - Placement of fill
  - Construction of dams and levees
  - Conversion to agriculture
  - Channelization
  - Drainage
- **Natural Events**
  - Change in river course
  - Beaver dams
  - Avalanches and mudslides
  - Fires
  - Volcanic deposition

Atypical Situations

Were wetlands present before disturbance? (e.g., enforcement cases)

Are wetlands now present on a disturbed site? (e.g., agricultural lands and man-

Atypical Situations

Enforcement
Cases

Determine the Date of the Alteration

Determine the date of the disturbance in relation to current enforcement policy:

- Direct questioning
- Aerial photographs
- Building permits

Atypical Situations

Procedures given in the Corps Manual depend on which parameter was disturbed:

- Vegetation
- Soils
- Hydrology

Atypical Situations -- Vegetation

Step 1. Describe the alteration.

Step 2. Describe effects on vegetation.

- Cleared or partially cleared
- Certain layers removed
- Selected species removed
- Burned, mowed, or heavily grazed
- Covered by fill
- Mortality due to excess water

Atypical Situations -- Vegetation

Atypical Situations -- Vegetation

Step 3. Characterize the original vegetation.

- Aerial photography - NRCS records
- On-site inspection - Permit applicant
- Previous site inspections - Public interviews
- Adjacent vegetation - NWI maps
- Nearby reference site

Step 4. Determine whether the vegetation was hydrophytic.

Atypical Situations -- Soils

Step 1. Describe the alteration.

- Dredged or fill material covers original soil
  - – Color or texture differences
  - – Decomposing vegetation between layers
  - – Non-woody debris at surface
- Subsurface plowing
- Removal of surface layers
  - – Exposed plant roots or scrape scars

Atypical Situations -- Soil

Step 2. Describe effects on soils.

- Record depth of fill over buried soil
- Record depth of plow zone
- Describe effects of soil compaction

Atypical Situations -- Soils

Atypical Situations -- Soil

Step 3. Characterize the original soils.

- Soil surveys
- Excavate and characterize buried soils
- Characterize plowed soils below the plow zone
- Examine adjacent areas or the B-horizon if surface layers were removed

Step 4. Determine whether the

Atypical Situations -- Hydrology

Step 1. Describe the alteration.

- Dams (man-made or natural)
- Levees or dikes
- Ditches or subsurface tiles
- Filling channels or depressions
- Water diversion
- Ground-water extraction
- Channelization

Atypical Situations -- Hydrology

Step 2. Describe the effects on hydrology.

- Changes in frequency and duration of inundation and soil saturation

Atypical Situations -- Hydrology

Step 3. Characterize previous hydrology.

- Stream or tide gage data
- Hydrology field indicators
- Aerial imagery
- Historical records
- Floodplain management maps
- Public or local officials

Step 4. Determine whether wetland hydrology was present.

Atypical Situations

Agricultural Lands

Are wetlands currently present?

Agricultural Lands -- Vegetation

Determine what vegetation would be present under normal circumstances.

- Volunteer vegetation between cultivations
- Adjacent vegetation at the same elevation
- Nearby undisturbed reference area with similar soils and hydrology
- Aerial photography taken before the conversion
- NWI maps made before the conversion
- NRCS records of typical vegetation on soil map units

Agricultural Lands -- Soils

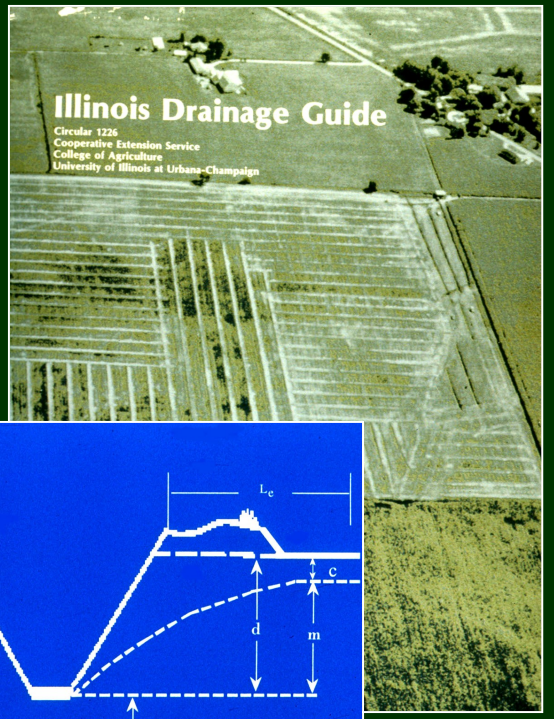
- Usually possible to do a routine hydric soil determination.
- If significantly disturbed:
  - Examine NRCS soil survey maps
  - Identify soil series based on deep horizons
  - Examine an undisturbed reference area
  - Test for chemical reduction or redox status
  - Monitor hydrology

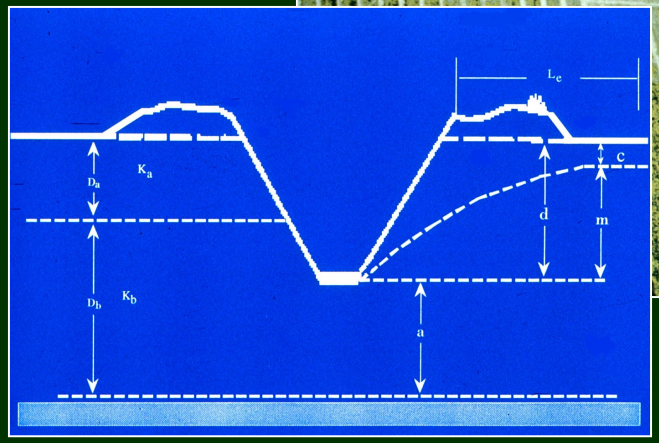
Agricultural Lands -- Hydrology

- Use NFSAM off-site procedures
- Check for current field indicators of wetland hydrology
- Directly monitor site hydrology
- Use methods for estimating or modeling hydrology (“Hydrology Tools for Wetland Determination”)
  - Effects of ditches and drains
  - Run-off models
  - DRAINMOD model

Agricultural Lands -- Hydrology

Effects of ditches and drainage tiles





Atypical Situations

Man-induced Wetlands

Man-Induced Wetlands

Areas that have developed at least some characteristics of naturally occurring wetlands due to intentional or incidental human activities.

Examples of Man-Induced Wetlands

- Irrigated wetlands
- Impoundment wetlands
- Filled deepwater habitats
- Dredged material sites
- Mitigation sites

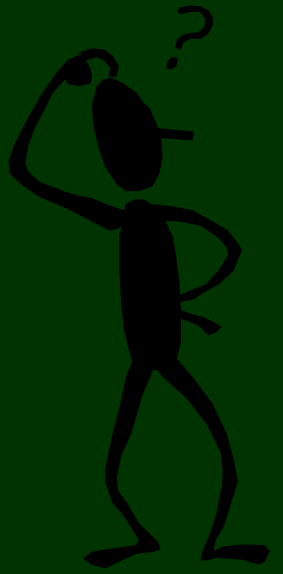
Man-Induced Wetlands

- Hydric soil indicators may be absent in wetlands created by recent human activities.
- If indicators of hydrophytic vegetation and wetland hydrology are present, soils can be assumed to be hydric.

Information Sources on the Web

- Evaluating the effects of ditches and drains
  - http://www.sedlab.olemiss.edu/java/tools_java.html

Problem Areas



Problem Area Wetlands

Wetlands in which indicators of one or more parameters may periodically be lacking due to normal seasonal or annual variability.

- The Corps Manual gives “representative examples.” Similar situations may exist in other wetland types.

Problem Area Wetlands

Wetlands on drumlins (or other glacial deposits)

Problem Area Wetlands

Seasonal wetlands

Vernal pools, CA

Problem Area Wetlands

Prairie

Problem Area Wetlands

Vegetated flats

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Problem Area Wetlands

In a Problem Area, the wetland determination must be based on “the best evidence available to the field inspector.”

Problem Area Wetlands

- Available information
  - NWI maps
  - NRCS soil surveys
  - Hydrologic data
  - Remote sensing
  - Local individuals and experts
- Data resulting from an on-site inspection
- Basic knowledge of the ecology of that community type

Problem Area Wetlands

Regional Supplement (Chapter 5):

-Wetlands that lack indicators of hydrophytic vegetation

-Problematic Hydric Soils

-Wetlands that periodically lack indicators of wetland hydrology

-Wetland/non-wetland mosaics

Problem Area Wetlands

1. Wetlands that lack indicators of hydrophytic vegetation – often FACU Dominated Wetlands
   - Floodplains/Riparian Areas
   - Forested Wetlands
- Facultative Upland plants occur in wetlands almost 1/3 of time
- Micro-topography may allow drier species to exist within a wetland

Problem Area Wetlands

2. Problematic hydric soils (e.g., Gray Parent Materials)
   - Gray soil color, low chroma
   - Similar to reduced/depleted matrix

- Verify color of parent material (dig deeper)
- Landscape position
- Faint indicators when wet

Problem Area Wetlands

3. Wetlands that periodically lack indicators of wetland hydrology:

- Site visits during dry season
- Years with low snow pack
- Periods of below normal rainfall
- Landscape position, reference site, soil and vegetation

Problem Area Wetlands

4. Mosaic landscape
   - Flarks and Strangs
   - Hummocks and tussocks

- Transect method

  - Measure linear feet of wetlands vs. uplands and determine percentage

- Aerial coverage/consensus
- Ground-truthed aerial photography to scale using planimeter